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## INCOMPLETE RECEPTION

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**Nixon Peabody LLP**  
Attorneys at Law

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**FAX**

Date: July 3, 2007

Pages (including cover): 7

To: Mail Stop Amendment

Fax: 571-273-8300

Ph:

From: Jeffrey L. Costellia, Reg. No. 35,483

Docket No. 740756-2832

Message: The following documents are being presented for facsimile filing in the United States Patent and Trademark Office:

1. Request for Reconsideration;
2. Fee Transmittal Form;
3. Information Disclosure Statement; and
4. Form PTO-1449 citing 1 reference.

In re Patent Application of  
Inventor(s): Shunpei YAMAZAKI et al.  
Application No. 11/085,077  
Filed: March 22, 2005  
For: METHOD FOR MANUFACTURING AN ELECTRO-OPTICAL DEVICE

Due Date: July 3, 2007  
Docket Number: 740756-2832

JLC/aj

**CERTIFICATE OF FACSIMILE TRANSMISSION [37 CFR 1.8(a)]**

I hereby certify that this correspondence is being facsimile transmitted to the USPTO at 571-273-0025 on July 3, 2007.

Signature:

Name:

  
Anika Johnson

Attorney Docket No. 740756-2832

**CERTIFICATE OF MAILING**

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Anika Johnson

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:	)	
Shunpei YAMAZAKI, et al.	)	Group Art Unit: 2822
Application No. 11/085,077	)	Examiner: Tsz K. Chiu
Filed: March 22, 2005	)	Confirmation No. 5574
For: METHOD FOR MANUFACTURING	)	
AN ELECTRO-OPTICAL DEVICE	)	

**REQUEST FOR RECONSIDERATION**

United States Patent and Trademark Office  
Customer Service Window, Mail Stop Amendment  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

In response to the Office Action mailed April 3, 2007, please review the above-identified patent application in view of the following remarks. Claims 1-5, 7-12 and 14 were pending in the present application prior to the above amendment and are believed to be in proper condition for allowance.

Referring now to the Office Action, claims 1, 3, 5, 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa (6,618,029) in view of Ono et al. (5,668,379). Claims 2, 4, 7, 9, 11, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ozawa in view of Hiroki et al. (5,218,464).

Applicants note that independent claims 1, 3, 5, 8, 10 and 12 recite that "a first insulating film comprising an organic resin over the thin film transistor" and "a second insulating film formed over the first insulating film, the second insulating film comprising at least one selected from the group consisting of silicon nitride, aluminum oxide, aluminum nitride, nitrated aluminum oxide and diamond like carbon". By forming a first

- 2 -

Application No. 11/085,077  
Docket No. 740756-2832

insulating film comprising an organic resin over the thin film transistor, the step due to the TFT can be leveled, and further, by forming a second insulating film comprising at least one selected from the group consisting of silicon nitride, aluminum oxide, aluminum nitride, nitrated aluminum oxide and diamond like carbon over the first insulating film, alkaline metals diffused from the EL element can be blocked and the second insulating film functions as a heat radiating layer. These elements are supported at least in the specification at page 17, line 22 to page 19, line 5.

The Examiner states that Ozawa discloses a first insulating film comprising an organic resin and a second insulating film comprising at least one selected from the group consisting of silicon nitride, aluminum oxide, aluminum nitride, nitrated aluminum oxide and diamond like carbon. However, it appears that Ozawa fails to teach these features. Neither Ono nor Hiroki remedies the deficiencies of Ozawa.

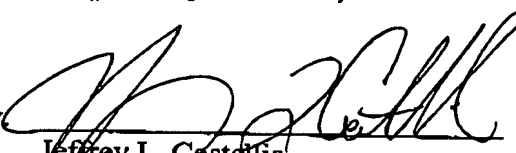
Therefore, Ozawa and Ono, alone or in combination, fail to teach or suggest all the elements of Applicants' claimed invention, and, even when Ozawa and Ono are combined, Applicants' claimed invention cannot be obtained. Applicants request that the claim rejections under 35 U.S.C. 103(a) be withdrawn. Dependent claims 2, 4, 7, 9, 11, and 14 depend from independent claims 1, 3, 5, 8, 10, and 12 are patentable at least for the above reasons. Applicants request that the claims rejections under 35 U.S.C. 103(a) for these claims also be withdrawn.

In view of the foregoing, it is submitted that the present application is in condition for allowance and a notice to that effect is respectfully requested. However, if any issue remains after considering this response, the Examiner is invited to call the undersigned to expedite the prosecution and work out any such issue by telephone.

Respectfully submitted,

Date: July 3, 2007

By

  
Jeffrey L. Costellia  
Registration No. 35,483

NIXON PEABODY LLP  
Customer No. 22204  
401 9<sup>th</sup> Street, N.W., Suite 900  
Washington, DC 20004-2128  
(202) 585-8000  
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Effective on 12/08/2004.  
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

# **FEE TRANSMITTAL FOR FY 2005**

Complete if Known

☐ Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT** (\$180.00)

Application Number 11/085,077

Filing Date March 22, 2005

First Named Inventor Shunpei YAMAZAKI et al.

Examiner Name Tsz K. Chiu

Art Unit 2822

Attorney Docket No. 740756-2832

## **METHOD OF PAYMENT (check all that apply)**

- ☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): \_\_\_\_\_
- ☒ Deposit Account Deposit Account Number: 19-2380 Deposit Account Name: \_\_\_\_\_
- For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
- ☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee
- ☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☐ Credit any overpayments

**WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-20238.

## **FEE CALCULATION**

### **1. BASIC FILING, SEARCH AND EXAMINATION FEES**

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

### **2. EXCESS CLAIM FEES**

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 or, for Reissues, each claim over 20 and more than in the original patent	50	25
Each independent claim over 3 or, for Reissues, each independent claim more than in the original patent	200	100
Multiple document claims	360	180
<b>Total Claims</b>		
<b>Extra Claims</b>		
HP = highest number of total claims paid for, if greater than 20		
<b>Indep. Claims</b>		
HP = highest number of independent claims paid for, if greater than 3		

### **3. APPLICATION SIZE FEE**

If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets - 100 = Extra Sheets / 50 = Number of each additional 50 or fraction thereof (round up to a whole number) X Fee (\$)

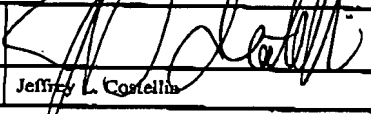
### **4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)

Other: Information Disclosure Statement Fee

**\$ 180.00**

### **SUBMITTED BY**

Signature  Registration No. 35,483 Telephone 202 585 8000

Name (Print/Type) Jeffrey L. Costello Date July 3, 2007

SEND TO: Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Attorney Docket No. 740756-2832

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop 313(c), Commissioner for Patents, Washington, D.C. 20231-1450, or being facsimile transmitted to the USPTO at 571-273-8300, on July 3, 2007.

  
Ashika Johnson

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:	)	
Shunpei YAMAZAKI, et al.	)	Group Art Unit: 2822
Application No. 11/085,077	)	Examiner: Tsz K. Chiu
Filed: March 22, 2005	)	Confirmation No. 5574
For: METHOD FOR MANUFACTURING	)	
AN ELECTRO-OPTICAL DEVICE	)	

INFORMATION DISCLOSURE STATEMENT

United States Patent and Trademark Office  
Customer Service Window, Mail Stop Amendment  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. §1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98.

It is requested that the accompanying PTO-1449 be considered and made of record in the above-identified application. To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

The Commissioner is hereby authorized to charge the Deposit Account No. 19-2380 in the amount of \$180 to comply with the provisions of 37 C.F.R. § 1.97(c).

Respectfully submitted,

Date: July 3, 2007

By:

  
Jeffrey L. Costellia  
Registration No. 35,483

NIXON PEABODY LLP  
Customer No. 22204  
401 9<sup>th</sup> Street, N.W., Suite 900  
Washington, DC 20004-2128  
(202) 585-8000  
(202) 585-8080 fax

10637356.1

Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)		Application Number	11/085,077
		Filing Date	March 22, 2005
		First Named Inventor	Shunpei YAMAZAKI et al.
		Art Unit	2822
		Examiner Name	Tsz K. Chiu
		Attorney Docket Number	740756-2832
Sheet	1	of	1

U.S. PATENT DOCUMENTS					
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	U.S. Patent Document Number - Kind Code <sup>2</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		US-6,359,606 B1	03-19-2002	YUDASAKA	

FOREIGN PATENT DOCUMENTS						
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> Number <sup>4</sup> Kind Code <sup>5</sup> (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials <sup>1</sup>	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>

Examiner Signature	Date Considered
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

<sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

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RECEPTION OK

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Pamela L. Patrick

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re PATENT Application of:	)	
Shunpei YAMAZAKI et al.	)	Group Unit: 2812
Serial No. 10/237,172	)	Examiner: Stanetta D. Issac
Filed: September 9, 2002	)	Confirmation No. 4413
For: LASER APPARATUS, LASER IRRADIATION	)	
METHOD, SEMICONDUCTOR MANUFACTURING	)	
METHOD, SEMICONDUCTOR ...	)	

**PETITION FOR WITHDRAWAL FROM ISSUE  
TO PERMIT CONSIDERATION OF INFORMATION  
DISCLOSURE STATEMENT UNDER  
SECTION 1.97 IN A CONTINUING APPLICATION**

Mail Stop 313(c)  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

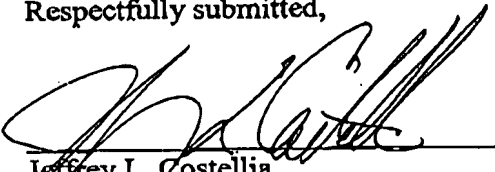
Applicants hereby petition for the withdrawal of this application from issue. The issue fee for this case was paid on January 17, 2007.

The reason for withdrawal from issue of this application is for consideration of information in a continuing application. The continuing application is filed as a Request for Continued Prosecution Application (RCE). The RCE, which is entitled to priority under 35 U.S.C. 120 from this application, is being filed on the same date as this petition and accompanies this petition.

Docket No. 740756-2530  
Serial No. 10/237,172

The Commissioner is authorized to charge the Petition Fee of \$130.00 or any deficiencies (except the issue fee) or credit any overpayment to Deposit Account No. 19-2380 (740756-2530). A duplicate copy of this sheet is attached.

Respectfully submitted,

  
Jeffrey L. Costellia  
Registration No. 35,483

NIXON PEABODY LLP  
401 9<sup>TH</sup> STREET, N.W., SUITE 900  
Washington, D.C. 20004  
(202) 585-8000  
(202) 585-8080 (Fax)

<b>REQUEST FOR CONTINUED EXAMINATION (RCE) TRANSMITTAL</b>  Subsection (b) of 35 U.S.C. § 132, effective on May 29, 2000, provides for continued examination of an utility or plant application filed on or after June 8, 1995. See The American Inventors Protection Act of 1999 (AIPA).	Application Number	10/237,172
	Filing Date	September 9, 2002
	First Named Inventor	Shunpei YAMAZAKI et al.
	Group Art Unit	2812
	Examiner Name	Stanetta D. Isaac
	Attorney Docket Number	740756-2530

This is a Request for Continued Examination (RCE) under 37 C.F.R. § 1.114 of the above-identified application.

**NOTE:** 37 C.F.R. § 1.114 is effective on May 29, 2000. If the above-identified application was filed prior to May 29, 2000, applicant may wish to consider filing a continued prosecution application (CPA) under 37 C.F.R. § 1.53(d) (PTO/SB/29) instead of a RCE to be eligible for the patent term adjustment provisions of the AIPA. See Changes to Application Examination and Provisional Application Practice, Final Rule, 65 Fed. Reg. 50092 (Aug. 16, 2000); Interim Rule, 65 Fed. Reg. 14865 (Mar. 20, 2000), 1233 Off. Gaz. Pat. Office 47 (Apr. 11, 2000), which established RCE practice.

- Submission required under 37 C.F.R. § 1.114**

  - ☐ Previously submitted
  - ☐ Consider the amendment(s)/reply under 37 C.F.R. § 1.116 previously filed on \_\_\_\_\_  
(Any unentered amendment(s) referred to above will be entered).
    - ☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_
    - ☐ Other \_\_\_\_\_
  - ☒ Enclosed
  - ☒ Petition to Withdraw from Issue
    - ☐ Affidavit(s)/Declaration(s)
    - ☒ Information Disclosure Statement (IDS)
  - ☐ Submission of Formal Drawings
  - ☐ Petition for One-Month Extension of Time
- Miscellaneous**

  - ☐ Suspension of action on the above-identified application is requested under 37 C.F.R. § 1.103(c) for a period of \_\_\_\_\_ months. (Period of suspension shall not exceed 3 months; Fee under 37 C.F.R. § 1.17(f) required)
  - ☐ Other \_\_\_\_\_
- Fees** The RCE fee under 37 C.F.R. § 1.17(e) is required by 37 C.F.R. § 1.114 when the RCE is filed.

  - ☒ The Director is hereby authorized to charge the following fees, additional fees which may be required, or credit any overpayments, to Deposit Account No. 19-2380
    - ☒ RCE fee required under 37 C.F.R. § 1.17(e)
    - ☐ Extension of time fee (37 C.F.R. §§ 1.136 and 1.17)
    - ☒ Other Petition Fee
  - ☒ The Director is authorized to charge Deposit Account # 19-2380 in the amount of \$920.00
  - ☐ Payment by credit card (Form PTO-2038 enclosed)

#### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED

Name (Print/Type)	Jeffrey L. Costellia	Registration No. (Attorney/Agent)	35,483
Signature		Date	July 3, 2007

#### CERTIFICATE OF MAILING OR TRANSMISSION (37 CFR 1.8(a))

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Signature:	
Name:	Pamela L. Patrick

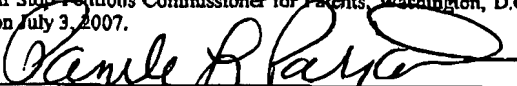
SEND TO: Mail Stop RCE  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

10641921.1

Application No. 10/237,172  
Docket No. 740756-2530

**CERTIFICATE OF MAILING**

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Pamela L. Patrick

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of: )  
Shunpei YAMAZAKI ) Group Art Unit: 2812  
Application No. 10/237,172 ) Examiner: Stanetta D. Isaac  
Filed: September 9, 2002 ) Confirmation No. 4413  
For: LASER APPARATUS, LASER IRRADIATION )  
METHOD, SEMICONDUCTOR MANUFACTURING )  
METHODS, SEMICONDUCTOR DEVICE, AND )  
ELECTRONIC EQUIPMENT )

**INFORMATION DISCLOSURE STATEMENT**

**Mail Stop Petitions**  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. §1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98. Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed.

The reference noted on the attached PTO-1449 was previously cited with the Information Disclosure Statement filed December 12, 2006 but not considered by the Examiner. Therefore, in view of the above applications' July 10, 2007 issue date, Applicants resubmit the Information Disclosure Statement accompanied by a Petition to Withdraw from Issue and a Request for Continued Examination.

In addition to the above, Applicants wish to note that reference JP-55-150238 noted on the attached PTO-1449 was cited in the counterpart Japanese Patent Application and mailed to applicants on September 12, 2006. Specifically, the reference noted herein was previously cited by Applicant on October 1, 2006 with an English Abstract. A full English translation is now provided.

- 2 -

Application No. 10/237,172  
Docket No. 740756-2530

It is requested that the accompanying PTO-1449 be considered and made of record in the above-identified application. To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initial a copy of this form be returned to the undersigned.

The Commissioner is hereby authorized to charge any fees connected with this filing which may be required now, or credit any overpayment to Deposit Account No. 19-2380.

Respectfully submitted,

Date: July 3, 2007By: Jeffrey L. Costellia  
Registration No. 35,483

NIXON PEABODY LLP  
Suite 900  
401 9<sup>th</sup> Street, N.W.  
Washington, DC 20004-2128  
Telephone: (202) 585-8000



(19) Japan Patent Office (JP) (11) Publication of Patent Application

(12) Patent Laid-Open Official Gazette (A) S55-150238

(51) Int.Cl.<sup>3</sup> ID No.: JPO Ref. No. (43) Date of Pub.: Nov. 22, 1980

H 01 L 21/324 6684-5F

5 21/26 6684-5F Number of Inventions: 1

Request for Examination: Not made

(3 pages in total)

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(54) LASER BEAM IRRADIATION METHOD

10

(21) Application No.: S54-57288

(22) Date of Filing: May 10, 1979

(72) Inventor: Haruhide FUSE

c/o Matsushita Electric Industrial Co., Ltd.

15

1006 Oaza Kadoma, Kadoma-shi

(71) Applicant: Matsushita Electric Industrial Co., Ltd.

1006 Oaza Kadoma, Kadoma-shi

(74) Agents: Toshio NAKAO, Patent Attorney, and one other Patent Attorney

20

**SPECIFICATION**

**1. Title of the Invention**

LASER BEAM IRRADIATION METHOD

25

**2. Scope of Claims**

A method of laser beam irradiation comprising:

30 while rotating a semiconductor substrate around a straight line that passes a point on a main surface of the semiconductor substrate and is perpendicular to the main surface, moving a laser beam or the semiconductor substrate such that the laser beam shines through a straight line that is above the main surface of the semiconductor substrate and that passes through a point on the main surface.

35 **3. Detailed Description of the Invention**

The present invention relates to a method of irradiating a semiconductor

substrate surface with a laser beam.

When uniformly heat treating a semiconductor substrate surface using a laser beam, since the diameter of the laser beam is extremely small compared to the semiconductor substrate, a method is used in which the laser beam is shone sequentially  
5 over the whole surface of the substrate. FIG 1 shows a conventional irradiation method. 1 is a laser oscillator, 2 and 3 are reflector plates which can rotate around a central axis, 4 is a semiconductor substrate, and 5 is a laser beam. Irradiation is conducted with the semiconductor substrate fixed on a flat surface, and positioning of the laser beam in an x direction and a y direction over the semiconductor substrate is conducted by changing the  
10 rotation angle of the reflector plate 2 or the reflector plate 3.

In the above method, the laser beam is shone linearly over the semiconductor substrate, and processing capacity is limited because changing the direction of movement of the irradiating beam at a turnaround point of the laser beam requires a significant amount of time. Moreover, in order to heat treat the whole surface of the substrate  
15 uniformly, it is necessary to provide turnaround points of the laser beam outside the substrate surface rather than inside the substrate surface, and therefore time is lost irradiating excess sections.

As a different irradiation method to the above method, there is a method in which a beam is fixed, and the substrate is moved rectilinearly in an x direction and in a y direction. However, in this method, the speed of the turning rectilinear movement is limited. Further, this method has the drawback that a rotation angle control device of the reflector plates is extremely complicated. The rotation angle control device of the reflector plates is used for changing irradiation pitch in accordance with changes in beam diameter in order to change irradiation energy density, changing movement speed, and the  
25 like.

The present invention provides a rotation irradiation method which can eliminate the drawbacks of the conventional linear irradiation methods above. Specifically, in the present invention, while a semiconductor substrate is rotated around a straight line that passes a point on a main surface of the semiconductor substrate and is  
30 perpendicular to the main surface, a laser beam or the semiconductor substrate is moved such that the laser beam shines through a straight line that is above the main surface of the semiconductor substrate and that passes through a point on the main surface. Thereby, high speed, uniform laser irradiation is conducted.

Next, the invention will be explained according to embodiments.

35 FIG 2 shows an embodiment of the present invention. In FIG 2, 11 is a laser oscillator, 12 is a rotating reflector plate, 15 is a laser beam, 13 is a substrate, 14 is a sample stand, and 16 is a rotary motor. The laser beam 15 irradiates the substrate 13

through the reflector plate 12. At that time, the whole of the substrate 13 is irradiated by gradually changing the angle of the reflector plate 12 while rotating the fixed rotary motor 16.

5 In this method, since the substrate is rotated by the rotary motor 16, the movement rate can be made sufficiently high, and rotation of the reflector plate 12 can be made relatively slow. In order to maintain irradiation energy density at a fixed level, it is necessary to change the rotation speed in accordance with the distance of the laser beam spot from the center of the substrate, to change the movement of the linear direction of the laser beam, and to change the laser beam energy. However, these changes can each be  
10 dealt with by a change which is in proportion to the distance of the laser beam spot from the center of the substrate, so control is simple.

In addition, it is also possible to change the irradiation energy density to a desired value just by controlling the rotation of the rotary motor 16.

Further, rectilinear movement by the reflector plate 12 is sufficient at a much  
15 slower speed than in the case of conventional examples, so uniform irradiation can be easily obtained. In FIG. 3, 21 is a laser oscillator, 22 is a rectilinear movement reflector plate, 27 is a reflector plate movement stand, 23 is a substrate, 24 is a sample rotation stand, and 26 is a rotary motor.

Similarly to Embodiment 1, this embodiment is an irradiation method in which  
20 the irradiation position of a laser beam 25 is changed while a substrate 23 is rotated. However, due to a structure in which the reflector plate 22 moves linearly along the fixed stand 27, the angle of incidence of the laser beam 25 with respect to the substrate 23 is maintained at a constant value, and thus, more uniform irradiation is possible than in the embodiment shown in FIG. 2.

25 FIG. 4 shows yet another embodiment. In FIG. 4, 31 is a laser oscillator, 32 is a rotating reflector plate, 33 is a substrate, 34 is a rotating sample stand, 35 is a laser beam, and 36 is a rotary motor. The rotary motor 36, the rotating sample stand 34, and the substrate 33 can move rectilinearly as a unit.

In this embodiment, the laser beam 35 is not moved, and while the substrate 33 is  
30 rotated, the substrate 33 is moved as a unit with the rotary motor. Thus, the whole substrate is scanned.

As described above, the irradiation method of the present invention has advantageous effects such as the fact that control of each parameter such as movement speed, irradiation pitch, and laser energy is simple, the fact that a uniform heat treatment  
35 can be realized at high speed, and the fact that the structure is simple.

#### 4. Brief Description of the Drawings

FIG 1 is a schematic diagram of a conventional laser beam irradiation method,  
FIG 2 is an explanatory diagram of an embodiment of the present invention,  
FIG 3 is an explanatory diagram of another embodiment of the present invention, and  
5 FIG 4 is an explanatory diagram of yet another embodiment of the present invention.

1, 11, 21, 31: Laser oscillators. 2, 3, 12, 22, 32: Reflector plates that can rotate or move  
rectilinearly. 4, 13, 23, 33: Semiconductor substrates. 14, 24, 34: Sample stands. 5, 15,  
25, 35: Laser beams. 16, 26, 36: Rotary motors.

10

Names of Agents: Toshio NAKAO, Patent Attorney, and one other Patent  
Attorney.

\*\*\*\*\*  
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\*\*\*\*\*

RECEPTION OK

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- ① Petition to Withdraw Application from Issue Under 37 CFR 1.313(c)  
② RCE Transmittal  
③ Information Disclosure Statement  
④ Japanese Publication No. 2002-142133  
⑤ Japanese Publication No. 2000-115802  
⑥ Japanese Publication No. 11-305734  
⑦ Japanese Publication No. 2002-116728  
⑧ Japanese Pub. No. 2002-333858

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

*In re* Patent Application of:

Jin-Hyun CHOI, *et al.*

Serial No.: 10/734,674

Confirmation No.: 6272

Filed: December 15, 2003

For: **IMAGE DISPLAY APPARATUS**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Docket No.: 6161.0106.US

Group Art Unit: 2629

Examiner: OSORIO, Ricardo

**PETITION TO WITHDRAW APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c)**

Sir:

Applicants hereby petition to withdraw the above referenced application from issue so that the attached Request for Continued Examination and Information Disclosure Statement may be considered. Withdrawal from issuance is necessary so that the references noted in the Information Disclosure Statement may be considered.

Pursuant to the Issue Notification mailed June 27, 2007, this application was due to issue on July 17, 2007.

The petition fee will be paid by credit card (Form PTO-2038 is enclosed). The Director is hereby authorized to charge **Deposit Account No. 50-3698 (H.C. Park & Associates, PLC)** for any deficiencies in the petition fee.

Respectfully submitted,

/hae-chan park/

Hae-Chan Park  
Reg. No. 50,114

Date: July 3, 2007

**CUSTOMER NO. 58027**  
Tel: 703-288-5105  
Fax: 703-288-5139

PTO-2038 (02-2003)

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**State/Province:** VA

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**Country:** US

**Daytime Phone #:** 703-288-5105

**Fax #:** 703-288-5139

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**Description of Request and Payment Information:**

Petition to Withdraw from Issuance Fee

<input checked="" type="checkbox"/> Patent Fee	<input type="checkbox"/> Patent Maintenance Fee	<input type="checkbox"/> Trademark Fee	<input type="checkbox"/> Other Fee
Application No. 10/734,674	Application No.	Application No.	IDON Customer No.
Patent No.	Patent No.	Registration No.	
Attorney Docket No. 6161.0106.US		Identify or Describe Mark	

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# **REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL** **(Submitted Only via EFS-Web)**

Application Number	10/734,674	Filing Date	2003-12-15	Docket Number (if applicable)	6161.0106.US	Art Unit	2629
First Named Inventor	Jin-Hyun CHOI			Examiner Name	OSORIO, Ricardo		

**This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.**  
 Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

## **SUBMISSION REQUIRED UNDER 37 CFR 1.114**

**Note:** If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on \_\_\_\_\_

☐ Other \_\_\_\_\_

☒ Enclosed

☐ Amendment/Reply

☒ Information Disclosure Statement (IDS)

☐ Affidavit(s)/ Declaration(s)

☒ Other

PETITION TO WITHDRAW APPLICATION FROM ISSUE UNDER 37 CFR 1.313(c)

## **MISCELLANEOUS**

☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months \_\_\_\_\_  
 (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

☐ Other \_\_\_\_\_

## **FEES**

☒ The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.  
 The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to  
 Deposit Account No 503698

## **SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**

☒ Patent Practitioner Signature

☐ Applicant Signature

PTO/SB/30EFS (05/07)

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Signature of Registered U.S. Patent Practitioner			
Signature	/hae-chan park/	Date (YYYY-MM-DD)	2007-07-03
Name	Hae-Chan Park	Registration Number	50114

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**Daytime Phone #:** 703-288-5105

**Fax #:** 703-288-5139

**Request and Payment Information**

**Description of Request and Payment Information:**

Request for Continued Examination

<input checked="" type="checkbox"/> Patent Fee	<input type="checkbox"/> Patent Maintenance Fee	<input type="checkbox"/> Trademark Fee	<input type="checkbox"/> Other Fee
Application No. 10/734,674	Application No.	Application No.	IDON Customer No.
Patent No.	Patent No.	Registration No.	
Attorney Docket No. 6161.0106.US		Identify or Describe Mark	

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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**  
(Not for submission under 37 CFR 1.99)

Application Number	10734674
Filing Date	2003-12-15
First Named Inventor	Jin-Hyun CHOI
Art Unit	2629
Examiner Name	OSORIO, Ricardo
Attorney Docket Number	6161.0106.US

**U.S. PATENTS**

Examiner Initial*	Cite No	Patent Number	Kind Code <sup>1</sup>	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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	1	2002-333858	JP		2002-11-22	Sharp Corp		<input type="checkbox"/>
	2	2002-116728	JP		2002-04-19	Matsushita Electric Ind-Co Ltd		<input type="checkbox"/>
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**INFORMATION DISCLOSURE  
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Application Number		10734674
Filing Date		2003-12-15
First Named Inventor	Jin-Hyun CHOI	
Art Unit	2629	
Examiner Name	OSORIO, Ricardo	
Attorney Docket Number	6161.0106.US	

4	2000-115802	JP		2000-04-21	Fujitsu General Ltd	<input type="checkbox"/>
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Application Number	10734674
Filing Date	2003-12-15
First Named Inventor	Jin-Hyun CHOI
Art Unit	2629
Examiner Name	OSORIO, Ricardo
Attorney Docket Number	6161.0106.US

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- ☐ See attached certification statement.
- ☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ None

**SIGNATURE**

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Signature	/hae-chan park/	Date (YYYY-MM-DD)	2007-07-03
Name/Print	Hae-Chan Park	Registration Number	50,114

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First Named Inventor	Jin-Hyun CHOI	<b>FAX RECEIVED</b>
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	3	11-305734	JP		1999-11-05	Hitachi Ltd		<input type="checkbox"/>

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( Not for submission under 37 CFR 1.99)

Application Number		10734674
Filing Date		2003-12-15
First Named Inventor	Jin-Hyun CHOI	<b>FAX RECEIVED</b>
Art Unit	2629	<b>JUL 03 2007</b>
Examiner Name	OSORIO, Ricardo	
Attorney Docket Number	6161.0106.US	<b>OFFICE OF PETITIONS</b>

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STATEMENT BY APPLICANT**  
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Application Number	10734674		
Filing Date	2003-12-15		
First Named Inventor	Jin-Hyun CHOI	<b>FAX RECEIVED</b>	
Art Unit	2629		
Examiner Name	OSORIO, Ricardo	JUL 03 2007	
Attorney Docket Number	6161.0106.US		

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- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached certification statement.
- ☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ None

**SIGNATURE**

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Signature	/hae-chan park/	Date (YYYY-MM-DD)	2007-07-03
Name/Print	Hae-Chan Park	Registration Number	50,114

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